

Amendments to the Claims:

1. (Currently Amended) A method of specifying ~~needed~~ sub-networks, the method comprising:

a) defining a plurality of graphs, wherein each graph has a set of nodes;

5 b) for each graph of the plurality of graphs, specifying two or more different sets of ~~local~~ node functions for each graph, wherein each set of ~~local~~ node functions for the each ~~particular~~ graph includes one ~~local~~ node function for each node of the ~~particular~~ graph, and the combination of the each graph with one of the set sets of ~~local~~ node functions specified for the graph specifies a sub-network;

10 c) for each graph of the plurality of graphs, storing the graph and the sets of ~~local~~ node functions specified for the graph; and

d) for each particular specified sub-network, storing an identifier that specifies the set of particular ~~local~~ node functions and the particular graph that specify the particular sub-network.

15 2. (Currently Amended) The method of claim 1, wherein the identifier for each particular sub-network specifies the locations for storing the set of particular ~~local~~ node functions and the particular graph that specify the particular sub-network.

3. (Currently Amended) The method of claim 1, wherein the identifier for each particular sub-network is a set of indices that specifies the set of particular ~~local~~ node functions
20 and the particular graph for the particular sub-network.

4. (Currently Amended) The method of claim 3, wherein the set of indices for each particular sub-network includes a graph index and a set of function indices, wherein the graph index identifies the particular graph for the particular sub-network, and each function index identifies a particular ~~local~~ node function of the particular sub-network.

5. (Currently Amended) The method of claim 4, wherein ~~the storage structure is a database, and~~ the graphs are stored in a graph table, and the ~~local~~ node functions are stored in at least one function table, wherein each graph index specifies a record in the graph table, and each function index specifies a record in the function table.

6. (Currently Amended) The method of claim 5, wherein the ~~local~~ node functions are stored in multiple function tables, wherein a first function table is for ~~are~~ n-input functions, and a second function table is for m-input functions, where n and m are integers, wherein some of the function indices specify functions in the first function table while other function indices specify functions in the second function table.

7. (Currently Amended) The method of claim 1, wherein each graph has a complexity that relates to at least one structural attribute of the graph, and defining the graphs comprises defining graphs up to a particular threshold complexity that relates to the at least one structural attribute of the graphs.

8. (Original) The method of claim 7, wherein each graph receives a set of inputs, wherein the structural attribute relates to the number of inputs in the set of inputs of each graph.

9. (Original) The method of claim 7, wherein the structural attribute relates to the number of nodes of each graph.

10. (Currently Amended) The method of claim 7, wherein each graph further comprises a set of interconnections between the nodes of the graph, and the structural attribute relates to the number of interconnections between the nodes of each graph.

11. (Currently Amended) The method of claim 1 further comprising:
a) identifying a set of output functions for each particular specified sub-network from the set of ~~local~~ node functions used to specify the sub-network;

b) generating a parameter for each sub-network based on the identified set of output functions for each sub-network;

e) storing the generated parameters ~~in the storage structure~~; and

d) associating the stored parameter for each sub-network with the identifier

5 for the sub-network.

12. (Cancelled)

13. (Currently Amended) A method of specifying ~~encoding~~ sub-networks, the method comprising:

a) specifying a graph with a set of nodes;

10 b) storing the graph;

c) storing first and second sets of ~~local~~ node functions, wherein each set includes a ~~local~~ node function for each node of the graph, wherein the combination of the graph and the first set of ~~local~~ node functions specifies a first sub-network, and the combination of the graph and the second set of ~~local~~ node functions specifies a second sub-network;

15 d) for the first sub-network, storing a first identifier that specifies the graph and the first set of ~~local~~ node functions; and

e) for the second sub-network, storing a second identifier that specifies the graph and the second set of ~~local~~ node functions.

14. (Currently Amended) The method of claim 13, wherein each graph node and the
20 node's corresponding ~~local~~ node function define a circuit element of the sub-network.

15. (Currently Amended) The method of claim 14, wherein the graph represents a topology of the circuit elements in each of the sub-networks.

16. (Currently Amended) A computer readable medium that stores a computer program for specifying ~~encoded~~ sub-networks, the computer program comprising sets of

instructions for:

a) defining a plurality of graphs, wherein each graph has a set of nodes;

b) for each graph of the plurality of graphs, specifying two or more different sets of ~~local~~ node functions ~~for each graph~~, wherein each set of ~~local~~ node functions for the each particular graph includes one ~~local~~ node function for each node of the particular graph, and the combination of the each graph with one of the set sets of ~~local~~ node functions specified for the graph specifies a sub-network;

c) for each graph of the plurality of graphs, storing the graph and the sets of ~~local~~ node functions specified for the graph; and

d) for each particular specified sub-network, storing an identifier that specifies the set of particular ~~local~~ node functions and the particular graph that specify the particular sub-network.

17. (Currently Amended) The computer readable medium of claim 16, wherein the identifier for each particular sub-network specifies the locations for storing the set of particular ~~local~~ node functions and the particular graph that specify the particular sub-network.

18. (Currently Amended) The computer readable medium of claim 16, wherein the identifier for each particular sub-network is a set of indices that specifies the set of particular ~~local~~ node functions and the particular graph for the particular sub-network.

19. (Currently Amended) The computer readable medium of claim 18, wherein the set of indices for each particular sub-network includes a graph index and a set of function indices, wherein the graph index identifies the particular graph for the particular sub-network, and each function index identifies a particular ~~local~~ node function of the particular sub-network.

20. (Currently Amended) The computer readable medium of claim 19, wherein ~~the storage structure is a database, and~~ the graphs are stored in a graph table, and the ~~local~~ node

functions are stored in at least one function table, wherein each graph index specifies a record in the graph table, and each function index specifies a record in the function table.

21. (Currently Amended) The computer readable medium of claim 20, wherein the ~~local~~ node functions are stored in multiple function tables, wherein a first function table is for n-
5 input functions, and a second function table is for m-input functions, where n and m are integers, wherein some of the function indices specify functions in the first function table while other function indices specify functions in the second function table.

22. (Currently Amended) The computer readable medium of claim 16, wherein each graph has a complexity that relates to at least one structural attribute of the graph, and the set of
10 instructions for defining the graphs comprises a set of instructions for defining graphs up to a particular threshold complexity that relates to the at least one structural attribute of the graphs.

23. (Previously Presented) The computer readable medium of claim 22, wherein each graph receives a set of inputs, wherein the structural attribute relates to the number of inputs in the set of inputs of each graph.

15 24. (Previously Presented) The computer readable medium of claim 22, wherein the structural attribute relates to the number of nodes of each graph.

25. (Currently Amended) The computer readable medium of claim 22, wherein each graph further comprises a set of interconnections between the nodes of the graph, and the
structural attribute relates to the number of interconnections between the nodes of each graph.

20 26. (Currently Amended) The computer readable medium of claim 16 further comprising sets of instructions for:

a) identifying a set of output functions for each particular specified sub-network from the set of ~~local~~ node functions used to specify the sub-network;

b) generating a parameter for each sub-network based on the identified set of output functions for each sub-network;

e) storing the generated parameters ~~in the storage structure~~; and

d) associating the stored parameter for each sub-network with the identifier

5 for the sub-network.